

DETAILED ACTION

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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2. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 9, it is unclear as to what applicant intends to be considered as the learning circuitry (42).

Re claims 10-11 which fails to remedy the issue for claim 9, thus they too are rejected as being indefinite.

Drawings

The drawings are objected to because the drawings are not label with text. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Nitta et al., US-2002/0051628A1.

As to claim 1, Nitta teaches A digital signal processing apparatus comprising: a means for converting a received video signal into a stream of digital numbers arranged in a sequence of digitized video frames (video signal input into element 18a A/D and [0053]), neighboring frames being separated by a synchronization signal; a means (20) for compressing the digitized frames (the MPEG video encoder 20 performs block DCT (discrete cosine transform) processing and MPEG coding processing, such as compensation processing, on the video data from the pre-video signal 19, [0030]); a means (30) for monitoring the synchronization signals (synchronous detection circuit, fig. 3 element 18b); and a means (32) for generating a synchronization signal in accordance with the monitored synchronization signals for clocking the digitized frames compressing means ([0055]).

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Regarding claim 14, see the rejection and analysis made for claim 1, except this is a claim to a method with the same limitations as the apparatus of claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 2-13 and 15-18, 20-21, 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nitta et al., US-2002/0051628 A1 in view of Tessier et al., US-5,146,336.

As to claim 2, Nitta is silent in regards to the apparatus as set forth in claim 1 wherein at least one synchronization signal is absent.

However, Tessier teaches wherein at least one synchronization signal is absent (Tessier teaches an apparatus for generating a synch absent signal upon the detection of the absence of the synch signal as part of the input video signal, col.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tessier with Nitta for providing improved image quality.

As to claim 3, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 2. Nitta is silent in regards to the apparatus as set forth in claim 2 wherein the monitoring means (30) detects an absence of the at least one synchronization signal.

However, Tessier teaches wherein the monitoring means (30) detects an absence of the at least one synchronization signal (Tessier teaches where it is desired to determine whether the sync from the input video signal is satisfactory to use, or whether it is corrupted or non-existent, col.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tessier with Nitta for providing improved image quality.

As to claim 4, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 3. Nitta is silent in regards the apparatus as set forth in claim 3 wherein the generating means (32) generates a replacement synchronization signal for the at least one absent synchronization signal.

However, Tessier teaches wherein the generating means (32) generates a replacement synchronization signal for the at least one absent synchronization signal (Tessier teaches where sync detector 10 detects the absence of sync pulses, and in response causes an overlay enable (sync absent) signal to be applied to a window generator 40. Window generator 40 receives an signal (LDG) from the video display generator 2, which is a window pulse surrounding the time of the normal sync interval and the color burst as described earlier. Comparing the timing of the sync absent signal and the LDG signal provides the overlay signal, which as described earlier is a pulse of variable width, that extends during the time period of the maximum sync interval over the period of absent sync, as designated by the sync absent signal. In other words, the overlay pulse indicates the interval when external sync should be replaced by internal sync, col. thus it is clear to the Examiner that Tessier replaces the missing synch signal with by the internal synch signal which reads upon the claimed limitation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tessier with Nitta for providing improved image quality.

As to claim 5, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 4. In addition, Nitta teaches the apparatus as set forth in claim 4 further including: a means (18) for storing at least one digitized frame (Nitta discloses where the frame synchronizer 18c has includes a memory having a storage capacity of at least one frame and input/output control circuit, [0055]).

As to claim 6, Nitta modified by as a whole teaches everything as claimed above, see claim 4. In addition, Nitta teaches the apparatus as set forth in claim 4 wherein the means (12) for converting the received analog signal into the stream of digital numbers includes at least one analog-to-digital converter (the NTSC decoder 18 performs A/D conversion processing and chroma encode processing on the video signal from the switch section 17, thus converting the video signal to a digital component video signal (herein referred to as video data), [0027]).

As to claim 7, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 4. Nitta is silent in regards to the apparatus as set forth in claim 4 wherein the means (32) for generating the replacement synchronization signal includes: a fixed clock (40) for generating the replacement synchronization signals for the sequence of digitized frames at a fixed rate.

However, Tessier teaches a fixed clock rate for generating the replacement synchronization signals for the sequence of digitized frames at a fixed rate (apparatus for locally generating a replacement video signal containing a video display which extends over a predetermined time interval, which is in sync with a local clock, abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tessier with Nitta for providing improved image quality.

As to claim 8, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 7. In addition, Nitta teaches the apparatus as set forth in claim

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7 further including: a means (18) for buffering digitized frames during monitoring for the absence of synchronization signals (Nitta discloses where the frame synchronizer 18c has includes a memory having a storage capacity of at least one frame and input/output control circuit, [0055]). Nitta is silent in regards to and generating of the replacement synchronization signal and inserting synchronization signals during the absence of incoming synchronization signals.

However, Tessier teaches where sync detector 10 detects the absence of sync pulses, and in response causes an overlay enable (sync absent) signal to be applied to a window generator 40. Window generator 40 receives an signal (LDG) from the video display generator 2, which is a window pulse surrounding the time of the normal sync interval and the color burst as described earlier. Comparing the timing of the sync absent signal and the LDG signal provides the overlay signal, which as described earlier is a pulse of variable width, that extends during the time period of the maximum sync interval over the period of absent sync, as designated by the sync absent signal. In other words, the overlay pulse indicates the interval when external sync should be replaced by internal sync, col. thus it is clear to the Examiner that Tessier replaces the missing synch signal with by the internal synch signal which reads upon the claimed limitation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tessier with Nitta for providing improved image quality.

As to claim 9, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 4. In addition, Nitta teaches the apparatus as set forth in claim 4 further including: a means (42) for determining a clock rate of the synchronization signals in one of the video signals and the sequence of digitized frames (fig. 3 element 45, crystal oscillator).

As to claim 10, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 9. Nitta is silent in regards to the apparatus as set forth in claim 9 wherein the means (32) for generating the replacement synchronization signal includes: a means (44) for inserting the replacement synchronization signal into the sequence of digitized frames at the determined clock rate of the synchronization signals.

However, Tessier teaches a means (44) for inserting the replacement synchronization signal into the sequence of digitized frames at the determined clock rate of the synchronization signals (apparatus for detecting the presence of an input sync signal which is part of the video input signal, and the absence of the sync signal during all or part of a sync interval of the video input signal, apparatus for locally generating a replacement video signal containing a video display which extends over a predetermined time interval, which is in sync with a local clock, col.1 line 52-58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tessier with Nitta for providing improved image quality.

As to claim 11, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 10. In addition, Nitta teaches the apparatus as set forth in claim 10 further including: a means (18) for storing at least two digitized frames to delay for the generation of replacement synchronization signals (Nitta teaches the frame synchronizer 18c includes a memory having a storage capacity of at least one frame and an input/output control circuit. As respective synchronizing signals corresponding to the horizontal and vertical synchronizing signals and the field identification signal of input/output signals and the clock signal are input, the frame synchronizer 18c can control the delay, [0055]).

As to claim 12, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 4. In addition, Nitta teaches, the apparatus as set forth in claim 4 further including: a means (18) for storing a plurality of the digital frames ([0055]); and, a means (42) for averaging a clock rate of the synchronization pulses of the frames in the storing means ([0056]). Nitta is silent in regards to controlling the generating means to generate the replacement synchronization signals locked to the average clock rate.

However, Tessier teaches to generate the replacement synchronization signals locked to the average clock rate (col. 1 line 50-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tessier with Nitta for providing improved image quality.

As to claim 13, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 4. In addition Nitta teaches the apparatus as set forth in claim 4 wherein the compressing means (20) is clocked by stable synchronization pulses when present (a video reproduction synchronous controller operable to generate a video reproduction clock and to control the timing of reproducing processing carried out by the video signal reproducing unit in accordance with the video reproduction clock [0010] and fig.1 and 2). Nitta is silent in regards to pulses from the generating means in the absence of sensed synchronization pulses.

However, Tessier teaches another embodiment of the invention adds to the above embodiment further by including apparatus for locally generating a sync signal, apparatus for phase-locking the local clock with the locally generated sync signal, apparatus for generating a sync absent signal upon the detection of the absence of the sync signal as part of the input video signal, col. 1 line 65 to col. 2 line 5.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tessier with Nitta for providing improved image quality.

Regarding claim 15, see the rejection and analysis made for claim 2, except this is a claim to a method with the same limitation as the apparatus of claim 2.

Regarding claim 16, see the rejection and analysis made for claim 4, except this is a claim to a method with the same limitation as the apparatus of claim 4.

Regarding claim 17, see the rejection and analysis made for claim 7, except this is a claim to a method with the same limitation as the apparatus of claim 7.

As to claim 18, see the rejection of claim 9 and 10, except this is a claim to a method with the limitations as the apparatus of claims 9 and 10.

As to claim 20, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 14. In addition Nitta teaches the method as set forth in claim 14, further including: monitoring a frequency of the synchronization signals ([0055]-[0056]); and averaging the frequency over a plurality of the synchronization signals to determine an actual clock rate of the synchronization signals ([0056])

As to claim 21, see the rejection and analysis made for claim 8, except this is a claim to an apparatus with common subject matter as the method of claim 8.

As to claim 24, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 14. Nitta is silent in regards to the method as set forth in claim 14 wherein the monitoring step includes: monitoring for the synchronization signals in a time window based on a preselected nominal synchronization clock rate.

However, Tessier teaches monitoring for the synchronous signals in a time window based on a preselected nominal synchronization clock rate (The sync interval window signal is generated in the video display generator 2, and is applied to the sync detector 10 on the CSN lead. The timing of this overlay signal is of course critical, and the establishment of the timing will be described below. The overlay signal extends for the time having maximum of the sync interval window, for the time interval when there is no received sync signal. It therefore is in the form of a variable width window having maximum width (time) which is the normal sync interval. This maximum width occurs in the absence of received sync, col. 3 line 67 to col. 4 line 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tessier with Nitta for providing improved image quality.

As to claim 25, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 24. In addition, Nitta teaches the method as set forth in claim 24 wherein the compressing step uses one of "MPEG" (fig. 2 element 20) and "AMPEX DCT" compression (Nitta discloses where moreover, in the recording/reproducing device 2, stable processing can be carried out, for example, even where a video signal of only one field exists as a video signal to be input for recording from the analog input terminal 13 or the antenna 11, or where the temporal length of a frame varies, as in varying-speed reproduction by a VCR (video cassette recorder), or where a frame is made discontinuous by switching the channel of the input signal, [0066]). Video cassette is indicative of the AMPEX format.

As to claim 26, see the rejection and analysis made for claim 13.

As to claim 27, Nitta teaches an audio/video digital imaging system comprising: an analog-to-digital converter (12) (fig. 3 element 18a) which receives video signals and converts them into a sequence of digitized frames (the NTSC decoder 18 performs A/D conversion processing and chroma encode processing on the video signal from the switch section 17, thus converting the video signal to a digital component video signal, [0027] and fig 3 element 18a), adjacent pairs of frames being separated by a synchronization signal; a sensing circuitry (30) which monitors for the synchronization signals(synchronous detection circuit, fig. 3 element 18b); a clock (32) (crystal

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oscillator); and a compression circuitry (20) which compresses the digitized frames at a clock rate set by the replacement synchronization signals ([0029] and fig. 3 element 45).

Nitta is silent in regards to generates replacement synchronization signals in accordance with the monitored synchronization.

However, Tessier teaches where sync detector 10 detects the absence of sync pulses, and in response causes an overlay enable (sync absent) signal to be applied to a window generator 40. Window generator 40 receives an signal (LDG) from the video display generator 2, which is a window pulse surrounding the time of the normal sync interval and the color burst as described earlier. Comparing the timing of the sync absent signal and the LDG signal provides the overlay signal, which as described earlier is a pulse of variable width, that extends during the time period of the maximum sync interval over the period of absent sync, as designated by the sync absent signal. In other words, the overlay pulse indicates the interval when external sync should be replaced by internal sync, col. thus it is clear to the Examiner that Tessier replaces the missing synch signal with by the internal synch signal which reads upon the claimed limitation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tessier with Nitta for providing improved image quality.

Claims 19 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nitta et al., US-2002/0051628 A1 in view of Tessier et al., US-5,146,336 and further in view of Well Known Prior Art (Official Notice.

As to claim 19, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 18. Nitta is silent in regards to the method as set forth in claim 18, further including: in response to detecting absent synchronization signals before the clock rate of the synchronization signals is determined, generating the replacement synchronization signals at a preselected fixed clock rate.

However, Official Notice is taken that both the concept and advantage of providing the limitation as claimed is notoriously well known and expected in the art, thus it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate in Nitta (modified by Tessier) for providing improved image quality.

As to claim 22, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 21. Nitta is silent in regards to the method as set forth in claim 21, further including: generating the replacement synchronization signals at the average frequency of the buffered digitized frames. However, Official Notice is taken that both advantage and concept of providing the limitation as claimed is notoriously well known and expected in the art, thus it would have been obvious to incorporate in Nitta (modified by Tessier) for providing improved image quality.

As to claim 23, Nitta (modified by Tessier) as a whole teaches everything as claimed above, see claim 20. Nitta is silent in regards to the method as set forth in claim 20 wherein the synchronization signal frequency is averaged for a preselected duration.

However, Official Notice is taken that both advantage and concept of providing the limitation as claimed is notoriously well known and expected in the art, thus it would have been obvious to incorporate in Nitta (modified by Tessier) for providing improved image quality.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA ROBERTS whose telephone number is (571)270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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